

ABSTRACT

The present invention teaches a method and apparatus for removing sacrificial materials in fabrications of microstructures using one or more selected spontaneous vapor phase etchants. The selected etchant is fed into an etch chamber containing the microstructure during each feeding cycle of a sequence of feeding cycles until the sacrificial material of the microstructure is exhausted through the chemical reaction between the etchant and the sacrificial material. Specifically, during a first feeding cycle, a first amount of selected spontaneous vapor phase etchant is fed into the etch chamber. At a second feeding cycle, a second amount of the etchant is fed into the etch chamber. The first amount and the second amount of the selected etchant may or may not be the same. The time duration of the feeding cycles are individually adjustable.